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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of: CARRABIS

Serial No.: 10/071,731

Filed: February 7, 2002

For: PROGRAMMABLE METHOD AND APPARATUS FOR REAL-TIME  
ADAPTATION OF PRESENTATIONS TO INDIVIDUALS

Group Art Unit: 2164

Examiner: Channavajjala, Srirama T. DOCKET: NEXT.1000

Mail Stop Appeal Brief - Patents  
Commissioner of Patents  
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Alexandria, VA 22313-1450

**RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF**  
**(37 CFR 41.37)**

Dear Sir:

In response to the Notice of Non-Compliant Appeal Brief mailed October 6, 2006,  
Applicants enclose a complete new brief (in triplicate) in compliance with 37 CFR 41.37.

In the event the Examiner deems personal contact is necessary, please contact the  
undersigned attorney at (603) 668-1400.

In the event there are any fee deficiencies or additional fees are payable, please  
charge them (or credit any overpayment) to our Deposit Account No. 08-1391.

Respectfully submitted,

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**CERTIFICATE OF MAILING**

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By: Kristine Stevens

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of: Carrabis	)	Group Art Unit 2164
	)	
Serial No.: 10/071,731	)	Examiner: Channavajjala, S.
	)	
Filed: February 7, 2002	)	Attorney Docket No. NEXT.1000
	)	
For: PROGRAMMABLE METHOD	)	
AND APPARATUS FOR	)	Appeal No.:
REAL-TIME ADAPTATION OF	)	
PRESENTATIONS TO	)	
INDIVIDUALS	)	

Mail Stop Appeal Brief-Patents  
Honorable Commissioner for Patents  
Alexandria, Virginia 22313-1450

**APPEAL BRIEF**

Sir:

This Appeal Brief under 37 C.F.R. §1.192 is submitted in support of the Notice of Appeal filed May 17, 2006, appealing to the Board from the action of the Patent Examiner's final Office Action, mailed March 28, 2006, finally rejecting pending claims 1-18 of the above referenced application.

**AUTHORIZATION TO DEBIT ACCOUNT**

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this response. However, in the event that additional extensions of time are necessary to allow consideration of this final response, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a) and any fee required therefore (including fees for net addition of claims) are hereby authorized to be charged to deposit account No. 08-1391.

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## **I. REAL PARTY IN INTEREST**

The real party in interest of the instant application is Joseph Carrabis, the sole inventor and a resident in the State of New Hampshire.

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## **II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

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### **III. STATUS OF THE CLAIMS**

Claims 1-18 are pending in the application. Claims 1-18 stand finally rejected under 35 U.S.C. §103(a). The Applicant hereby appeals the foregoing final rejection for claims 1-18.

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#### **IV. STATUS OF THE AMENDMENTS**

One office action response was filed after the final Office Action. A response to an August 6, 2004 non-final office action was filed without amendment to the claims. A response to a February 14, 2005 non-final office action was filed without amendment to the claims. The final rejection was rescinded after filing an appeal brief. A response to an October 18, 2005 non-final office action was filed without amendment to the claims. In fact, the claims have not been amended since the original February 7, 2002 filing.

Accordingly, the claims attached hereto in Appendix A reflect the office action responses mentioned above.

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## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

Ever start talking with someone (e.g., a spouse, a child, an employee, etc.) and feel like not a single word was being heard? They unintentionally, but completely, zoned you out. Or had a class where you had trouble understanding anything the professor said, while classmates did not encounter the same problem. Ever read the same page of a book four or five times and simply be unable to retain anything you read? It may be that at that time you were internally receptive to one mode of information, audible, for instance, but that book was providing the information in a visual mode. Or you may have been excited about something imminent, which internally left you wanting to receive information kinesthetically, even though most days you do prefer to receive information visually.

The present invention, claimed as described below, allows a programmable device to determine an individual's preferred modality based on sensed psychomotor behavioral elements of the individual. The programmable device, as claimed in the dependent claims, may then be used to tailor a presentation of information or environment to the modality(ies) in which the user is most receptive.

The Application has two independent claims, namely, claim 1 and claim 12.

Independent claim 1 is for a method of obtaining information regarding an environment for an individual, having preferred modalities and engaged in

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activity, using a programmable device. Page 23, lines 1 and 2 and element 10 of FIG. 1. Said method includes the step of sensing at least one psychomotor behavioral element of the activity engaged by the individual. Page 23, lines 2-8 and elements 11 and 12 of FIG. 1. The method further includes determining the preferred modalities of the individual based on the psychomotor behavioral element of the activity engaged by the individual. Page 23, lines 8-15 and element 14 of FIG. 1.

Claim 12 concerns a programmable apparatus for obtaining information regarding an environment to an individual having preferred modalities. Page 27, lines 3-5 and element 40 of FIG. 3. The apparatus includes at least one sensor for sensing psychomotor behavioral activity of the individual. Page 27, lines 5-6 and element 44 of FIG. 3. The apparatus also includes and a processing unit connected to the sensor for receiving the sensed psychomotor behavioral activity and calculating the individual's preferred modalities based on the sensed psychomotor behavioral activity. Page 27, lines 6-9 and element 46 of FIG. 3.

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## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The issue in this appeal is whether claims 1-18 are patentable over the cited references, with regards to 35 U.S.C. § 103(a).

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## **VII. ARGUMENT**

### **A. Case Law of U.S.C. §103(a)**

It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must teach, disclose, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., In re Dow Chemical, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988), and In re Keller, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

### **B. Claims 1, 11, 12 and 18**

#### **1. US Patent No. 5,987,415 to Breese in View of U.S. Patent No. 6,230,111 to Mizokawa Fail to Teach, Disclose, or Suggest Each Element of the Claims**

On page 3 of the final Office Action, claims 1, 11, 12 and 18 are rejected under 35 U.S.C. §103 as allegedly being obvious over U.S. Patent No.

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5,987,415 to Breese et al. (hereinafter "Breese") in view of U.S. Patent No. 6,230,114 to Mizokawa (hereinafter "Mizokawa").

## **2. Independent Claims 1 and 12**

Applicant respectfully submits that independent claims 1 and 12 are distinguishable over the present combination of references in that independent claims 1 and 12 recite features and steps that are neither disclosed, taught, nor suggested by the prior art of record. Independent claims 1 and 12 are set forth below.

Independent claim 1 provides as follows:

1. A method of obtaining information regarding an environment for an individual, having preferred modalities and engaged in activity, using a programmable device, said method comprising the steps of:
  - sensing at least one psychomotor behavioral element of the activity engaged by the individual; and
  - determining the preferred modalities of the individual based on the psychomotor behavioral element of the activity engaged by the individual.

Independent claim 12 provides as follows:

12. A programmable apparatus for obtaining information regarding an environment to an individual having preferred modalities, said apparatus comprising:
  - at least one sensor for sensing psychomotor behavioral activity of the individual; and
  - a processing unit connected to the sensor for receiving the sensed psychomotor behavioral activity and calculating the

individual's preferred modalities based on the sensed psychomotor behavioral activity.

### 3. The Examiner's Rejection

It is stated in the final office action, on pages 3-5, that:

As to claims 1, 8, 12, and 18 Breese teaches a system which including 'method of obtaining information regarding an environment for an individual having preferred modalities and engaged in activity using a programmable device' [see Abstract, col 4, line 57-62, col 6, line 36-44, col 8, line 8-12, col 10, line 23-27, fig 3], environment for an individual corresponds to Breese's computer user interface that including observing user behavior, particularly user behavior caused from emotion and personality state as detailed in col 4, line 59-60, further it is noted that Breese specifically teaches a model that influence of emotion and personality based on Bayesian network as detailed in fig 3, programmable device corresponds to program modules being executed by a personal computer because program modules include processes, programs and like as detailed in col 6, line 40-42; 'sensing at least one psychomotor behavioral element of the activity engaged by the individual' [col 8, line 23-28, line 35-41, col 10, line 34-42], Breese specifically teaches Bayesian net integrate various aspects of emotion and personality in a single model for example cognitive response as well as physical response based on the mental state, further, it is noted that personality nodes capture or senses individual emotional and or personality state as detailed in col 10, line 34-42; 'psychomotor behavior element on the activity engaged by the individual' [col 12, line 49-59, fig 6], psychomotor behavior elements corresponds to loud, angry voice tones, calm quite voice related to emotional state and personality of the user as detailed in col 12, line 50-52. It is however, noted that Breese does not specifically teach "determining the preferred modalities of the individual". On the other hand, Mizokawa teaches a system which including 'determining the preferred modalities of the individual corresponds to Mizokawa's user's emotions as detailed in col 6, line 58-60.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Mizokawa into modeling user's

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emotion and personality in a computer user interface of Breese et al. because both are directed to user behavior and emotion model, more specifically Breese is directed to computer based capturing emotion and personality states that including multistage representation of emotion and personality variables, while Mizokawa is directed to controlling object using pseudo-emotions and pseudo-personality generated in the object, more specifically recognizing, updating user commands related to pseudo-personality, pseudo-emotions and pattern of behavior [see Abstract, fig 2-3].

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Mizokawa into modeling user's emotion and personality in a computer interface of Breese et al. because that would have allowed users of Breese to use user evaluation, emotion recognition units to observe various pattern of behavior of modality, further allowing to determine pseudo-emotions, predetermined relationship between patterns of autonomous behavior, [see Mizokawa: col 2, line 15-34], thus improving evaluation of user's intellectual work or desire [col 1, line 51-60].

Then, on page 4, it is further stated in the final Office Action that:

As to Claim 11, Mizokawa disclosed 'preprogramming the device to monitor the individual for at least one specific type of psychomotor behavioral elements' [col 4, line 25-46]; 'communicating an occurrence of the specific type of psychomotor behavioral element' [col 4, line 39-46].

#### **4. Discussion of the Cited References**

Breese teaches an invention embodied in a computer user interface.

The interface includes an observer capable of observing user behavior, an agent capable of conveying emotion and personality by exhibiting corresponding behavior to a user, and a network linking user behavior observed by said observer and emotion and personality conveyed by said agent. A policy module can dictate to the agent network desired emotion and personality states

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to be conveyed by the agent based upon user emotion and personality states inferred by the observing network. Basically, Breese is designed to read emotional and personality characteristics of a user and broadcast emotion and personality to the user through an agent based on what the network deems will elicit a desired response from the user. As the final office action admits, Breese does not teach, "determining the preferred modalities of the individual."

Mizokawa is directed towards a semi-autonomous device. The device senses information related to a communication from a user. That information is reviewed for emotional content and, while providing output related to a separate task, tailors the delivery of that output to be responsive to the emotional content sensed.

**5. Patentable Distinctions Between the Present Claims and the Cited References**

One of the patentable distinctions between the patents referenced and the claimed invention is that the references fail to teach determining the preferred modalities of the user. The Examiner in this case errantly suggests that emotions are modalities.

Specifically, Breese in view of Mizokawa fails to at least teach, disclose, or suggest determining the preferred modalities of the individual. Page 4 of the Office Action correctly states that Breese fails to at least teach, disclose, or suggest determining the preferred modalities of the individual. Therefore, only

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the suggestion that Mizokawa teaches determining the preferred modalities of the individual.

As the office action states on pages 4 and 5, "Mizokawa is directed to controlling object using pseudo-emotions and pseudo-personality generated in the object, more specifically, recognizing, updating user commands related to pseudo-personality, pseudo-emotions, and patterns of behavior." Applicant's claim of determining the preferred modalities of the individual is distinctly different from the teachings of Mizokawa's programmed responses to sensed emotions.

As detailed in the filed application, "humans have as many modalities as they have senses. For the purposes of a simplified discussion, we use a simplified web browser interface for reference. We can match the sensory modalities to the presentation via a grid. The grid [shown in the application] represents three of the many sensory modalities most humans share; visual, auditory and kinesthetic." Paragraph 54 of the application. This statement should not be read to limit the modalities to the five common senses. The "sensory" modalities are "input" modalities and those having ordinary skill in the art recognize that sensory modalities include things like visual, auditory, kinesthetic, olfactory, gustatory, vestibular, proprioceptive, tactile and vomeronasal. There is some conjecture if the PNI is another sensory modality. Consciousness researchers are discovering we have more senses than we previously realized (vomeronasal, for example, wasn't recognized as a sense until the mid-1990s). It is sufficient to say that we have more sensory modalities

than the five a school child can name and it is reasonable to believe in the future we may understand we have more senses than we recognize today.

Paragraphs 66-75 further detail modalities as claimed. As described in paragraphs 66 and 67, "when grid movement is determined the modality summations can be selected to determine if the viewer's attention is focused on visual, auditory, kinesthetic or other related cues. Based on the results of this equation, the web server can prepare in real time what the next presentation and interface should be in order to capture more of the viewer's attention by presenting the web content in modalities, which the viewer has nonconsciously selected."

As described in the above passages and the cited portions of the application, the present invention is directed toward determining preferred modalities of an individual. The preferred modalities are both sensory and cognitive (internal?) in nature – which sensory modes does the individual prefer for receiving information and what internal modalities must be engaged for acceptance, understanding, decision making, or other actions. Some people would prefer to receive visually-oriented information over auditory-oriented information. Mizokawa does not teach identifying preferred modalities of an individual. Mizokawa teaches recognition of emotion and a programmable pseudo-emotional response. Emotions are not modalities.

Read the passage of Mizokawa [col 6, line 55-60] the Examiner cites as determining the preferred modalities of the individual:

Further, based on the presumed emotions, the user's emotion recognition unit A2 determines the user's current emotion. In the above, the

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several patterns of emotions are obtained by the categorizing in advance the emotion expressions of the user into several patterns of emotions, such as joyful, sad, surprised, angry, disgusted, and fearful.

This passage does not teach determining preferred modalities, it teaches categorizing emotional output.

There are other passages of Mizokawa that teach the device tailors its emotions to be liked by the user, but emotions are irrelevant to modalities as defined in the application. This argument was raised in response to the non-final office action of 10/18/05 and the Examiner rebuked the argument on pages 10-12 of the final office action, however none of the Examiner's comments suggested how the pseudo-emotional programming of the Mizokawa device amounts to "preferred modalities" as claimed in this application and as defined intrinsically within the application.

As can readily be seen, the Applicant's claim is limited to determining preferred modalities, rendering the claim allowable in view of Breese and Mizokawa for at least this reason. Therefore, the Applicant respectfully requests submits claims 1 and 12 are allowable in that they recite features and steps that are neither disclosed, taught, nor suggested by Breese in view of Mizokawa. Furthermore, the Applicant submits that claims 2-11 and 13-18 are allowable for at least the reason that they depend either directly or indirectly from allowable independent claims. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988).

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**C. Claims 2, 3, 10, 13, 16, and 17**

**1. US Patent No. 5,987,415 to Breese in View of U.S. Patent No. 6,230,111 to Mizokawa Fail to Teach, Disclose, or Suggest Each Element of the Claims**

On pages 5-8 of the final Office Action, claims 2, 3, 10, 13, 16, and 17 are rejected under 35 U.S.C. §103 as allegedly being obvious over Rise in view of Lieberman. The limitations of Claim Group II are all directed toward modification of an environment of the individual whose activity is being sensed.

**2. The Examiner's Rejection**

It is stated in the final office action, on page 5, that "Mizokawa teaches a system which including 'modifying at least one modifiable environmental unit to at least partially conform to the preferred modalities' [col 6, line 46-54, fig 4]" with regards to claim 2.

It is stated in the final office action, on page 5, that "Breese teaches a system which including 'environment unit is modified in real-time' [col 17, line 35-43]," with regards to claim 3.

It is stated in the final office action on page 7, that "the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Breese teaches 'multi-dimensional and has a plurality of modifiable environmental units' [col 10, line 59-67]," with regards to claim 10.

It is stated in the final office action, on page 6, that "Breese teaches algebraic transforms' [col 2, line 38-49], Breese specifically teaches Bayesian

network model associate with various algebraic transforms. On the other hand, Mizokawa teaches a system which including 'sensed psychomotor behavioral element is stored' [col 7, line 53-59, col 8, line 14-29], psychomotor behavioral element corresponds to Mizokawa's user's emotions that including obedience, aggressiveness, curiosity, cheerful and like as detailed in col 8, line 14-29," with regards to claim 13.

It is stated in the final office action, on page 7, that "Mizokawa disclosed 'modalities are calculated while sensing psychomotor behavioral activity and concurrently used for modifications to the environmental units' [col 10, line 15-24], with regards to claim 16."

It is stated in the final office action, on page 8, that "Mizokawa disclosed 'sensor includes at least one input device for a computer and the modifiable environmental unit includes at least one output device' [fig 1, col 4, line 51-59]," with regards to claim 17.

### **3. Discussion of the Cited References**

Breese teaches an invention embodied in a computer user interface. The interface includes an observer capable of observing user behavior, an agent capable of conveying emotion and personality by exhibiting corresponding behavior to a user, and a network linking user behavior observed by said observer and emotion and personality conveyed by said agent. A policy module can dictate to the agent network desired emotion and personality states to be conveyed by the agent based upon user emotion and personality states

inferred by the observing network. Basically, Breese is designed to read emotional and personality characteristics of a user and broadcast emotion and personality to the user through an agent based on what the network deems will elicit a desired response from the user. As the final office action admits, Breese does not teach, "determining the preferred modalities of the individual."

Mizokawa is directed towards a semi-autonomous device. The device senses information related to a communication from a user. That information is reviewed for emotional content and, while providing output related to a separate task, tailors the delivery of that output to be responsive to the emotional content sensed.

#### **4. Patentable Distinctions Between the Present Claims and the Cited References**

This grouping of claim is joined by the fact that each are limited to modifying the environment relative to the calculated preferred modalities. As stated in Section VII. B., herein, neither of the references teaches calculating preferred modalities. Obviously, if the references do not teach calculating preferred modalities, they cannot be said to modify an environment to conform to those preferred modalities. However, setting aside this significant reason for allowance, the rejections of the Examiner fail to show the references teach the claimed invention.

Claim 2 is related to modifying the environment based on the determined preferred modalities of the user. To reject this claim, the Examiner cites to

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sensors in Mizokawa that perform facial and auditory analysis. These structures do not modify the environment of the individual. As specified in the cited passage, these are merely input devices. This is a clearly erroneous rejection.

Claim 3 depends from claim 2 and is further limited to modifying the environment in real time. The Examiner cites to Breese for modifying the environment of the individual. However the passage cited merely updates the network relative to information sensed from the individual. Again, the environment of the user is unmodified and is not made to conform to the preferred modalities of the user.

Claim 10 is rejected based on another passage of Breese. The Examiner blankly states the environment of Breese is multi-dimensional and has a plurality of modifiable environmental units. It is unclear from the passage what the Examiner regards as the dimensions of the environment in Breese and what the modifiable units are.

Claim 13 is limited to "at least one modifiable environmental unit, modified by at least one instruction from the processing unit to at least partially conform the environment to the calculated preferred modality of the individual." The Examiner rejects claim 13 on page 6 of the final office action without identifying: 1) an environmental unit of Breese; 2) an instruction used to modify an environmental unit of Breese; or 3) how the environmental unit conforms to the preferred modality. It is unclear why this claim is rejected.

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Claim 16 is limited to calculating modalities while sensing psychomotor behavior and concurrently modifying the environment. Presumably the present obviousness rejection is based on two references because the Examiner does not feel Mizokawa anticipates claim 12, yet here the Examiner is implicitly stating that Mizokawa teaches every element of claim 12 plus the narrower embodiment of claim 16.

Claim 17 refreshingly identified a modifiable environmental unit that is an output device, thereby being capable of modifying the environment of an individual. Claim 16 and claim 17 depend from claim 13 and are allowable for the same reasons claim 13 is allowable.

**D. Claims 4, 5, 14, and 15**

**1. US Patent No. 5,987,415 to Breese in View of U.S. Patent No. 6,230,111 to Mizokawa Fail to Teach, Disclose, or Suggest Each Element of the Claims**

On pages 5-7 of the final Office Action, claims 4, 5, 14, and 15 are rejected under 35 U.S.C. §103 as allegedly being obvious over Breese in view of Mizokawa. The limitations of Claim Group III are all directed toward storing sensed psychomotor behavioral elements.

**2. The Examiner's Rejection**

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It is stated in the final office action, on page 5, that "Mizokawa teaches a system which includes 'storing sensed psychomotor behavioral elements in a user history' [col 7, line 32-40, line 51-55]," in regards to claim 4.

It is stated in the final office action, on page 6, that "Breese teaches algebraic transforms' [col 2, line 38-49], Breese specifically teaches Bayesian network model associate with various algebraic transforms. On the other hand, Mizokawa teaches a system which including 'sensed psychomotor behavioral element is stored' [col 7, line 53-59, col 8, line 14-29], psychomotor behavioral element corresponds to Mizokawa's user's emotions that including obedience, aggressiveness, curiosity, cheerful and like as detailed in col 8, line 14-29," in regards to claims 5 and 15.

It is stated in the final office action, on page 7, that "Mizokawa disclosed 'memory device to store sensed psychomotor behavioral activity of the individual' [col 7, line 60-64]," in regards to claim 14.

### **3. Discussion of the Cited References**

Breese teaches an invention embodied in a computer user interface. The interface includes an observer capable of observing user behavior, an agent capable of conveying emotion and personality by exhibiting corresponding behavior to a user, and a network linking user behavior observed by said observer and emotion and personality conveyed by said agent. A policy module can dictate to the agent network desired emotion and personality states to be conveyed by the agent based upon user emotion and personality states

inferred by the observing network. Basically, Breese is designed to read emotional and personality characteristics of a user and broadcast emotion and personality to the user through an agent based on what the network deems will elicit a desired response from the user. As the final office action admits, Breese does not teach, "determining the preferred modalities of the individual."

Mizokawa is directed towards a semi-autonomous device. The device senses information related to a communication from a user. That information is reviewed for emotional content and, while providing output related to a separate task, tailors the delivery of that output to be responsive to the emotional content sensed.

4. **Patentable Distinctions Between the Present Claims and the Cited References**

a. **Storing sensed psychomotor behavioral element**

The Examiner does not suggest that Mizokawa teaches sensing psychomotor behavioral elements. It is difficult to conceive how Mizokawa can store sensed information without also sensing the information.

b. **Linear algebraic transforms**

The Examiner has repeatedly, during the course of this prosecution, rejected claim 5 based on finding various references storing information through the use of algebraic transforms. In all cases the references store information using algebraic transforms. In none of the cases do the references use *linear*

algebraic transforms. The latest reference, Breese, teaches storing information through the use of algebraic transforms, as the Examiner indicates on pages 6 and 12 of the final Office Action. Breese does not teach storing information using *linear* algebraic transforms, which is the claim limitation.

**E. Claims 6-8**

**1. US Patent No. 5,987,415 to Breese in View of U.S. Patent No. 6,230,111 to Mizokawa Fail to Teach, Disclose, or Suggest Each Element of the Claims**

On pages 6 and 7 of the final Office Action, claims 6-8 are rejected under 35 U.S.C. §103 as allegedly being obvious over Breese in view of Mizokawa. The limitations of Claim Group IV are all directed toward determining a preferred combination of modalities and an ordering thereof.

**2. The Examiner's Rejection**

It is stated in the final office action, on page 6, that "Mizokawa teaches determining preferred modalities including determining a preferred combination of modalities and an ordering of modalities by preference thereby further defining a focus of the individual's attention' [col 7, line 11-17, line 21-24]," with respect to claim 6.

It is stated in the final office action, on page 6, that "Mizokawa disclosed 'modifying the environmental unit to provide content in the environment in the preferred combination of modalities and the order of the modalities by

preference whereby the combination and the order are placed in at least one respective co-ordinate group of representational geometry to which attention of the individual is drawn, as indicated by the psychomotor behavioral element' [col 6, line 46-62]," with respect to claim 7.

It is stated in the final office action, on page 7, that "Breese disclosed 'defining a psychodynamic and a cognitive behavioral model using preferred combination modalities and the order of modalities' [col 5, line 5-10, line 23-28]; 'modifying at least one environmental unit as a function of the psychodynamic behavioral model and the cognitive behavioral model' [col 8, line 35-43]," with respect to claim 8.

### **3. Discussion of the Cited References**

Breese teaches an invention embodied in a computer user interface. The interface includes an observer capable of observing user behavior, an agent capable of conveying emotion and personality by exhibiting corresponding behavior to a user, and a network linking user behavior observed by said observer and emotion and personality conveyed by said agent. A policy module can dictate to the agent network desired emotion and personality states to be conveyed by the agent based upon user emotion and personality states inferred by the observing network. Basically, Breese is designed to read emotional and personality characteristics of a user and broadcast emotion and personality to the user through an agent based on what the network deems will

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elicit a desired response from the user. As the final office action admits, Breese does not teach, "determining the preferred modalities of the individual."

Mizokawa is directed towards a semi-autonomous device. The device senses information related to a communication from a user. That information is reviewed for emotional content and, while providing output related to a separate task, tailors the delivery of that output to be responsive to the emotional content sensed.

**4. Patentable Distinctions Between the Present Claims and the Cited References**

**a. Determining a preferred combination of modalities**

On page 4 of the final Office Action, the Examiner states, "preferred modalities of the individual corresponds to Mizokawa's user's emotions," a point contested by the Applicant above. However, in rejecting claim 6, the Examiner does not cite to a section of the reference that purports to combine Mizokawa's user's emotions or determine a preferred combination of Mizokawa's user's emotions. It would appear the Examiner's definition of "preferred modalities" has changed for this rejection.

In paragraph 80 of the application, preferred combinations of modalities is explained:

Another narrow embodiment of the inventive method 10 narrows the step of determining preferred modalities to further determine 20 a preferred combination of modalities and 22 an ordering of modalities by preference thereby further defining a focus of the individual's preferred modalities. The present inventive method 10 may determine 14 that the individual

prefers to receive information audially as opposed to visually. This narrower embodiment would further determine 20 the individual prefers to receive information audially 65% and visually 35%.

It is fairly evident that Mizokawa does not teach a preferred combination of modalities as it is explained in the application.

On page 12 of the final Office Action, the Examiner declares the cited passage in column 7 teaches "establishing relationship between emotions and characteristics of sounds/voices and facial expression." Again, it sounds like this passage is determining "user's emotions" not determining "preferred combinations of user's emotions" and certainly not doing anything related to determining preferred combinations of modalities, as defined in the application.

b. **Determining ... an ordering of modalities by preference**

The Examiner chose to find the limitation of "ordering" in the same paragraph as the "combination" rejection above. In paragraph 80 of the application, following the quoted passage above, the Applicant further explained the ordering limitation with the following example:

This narrower embodiment would further determine 22 the individual prefers to receive information in the aforementioned percentages by receiving 50% of the visual information first and then receiving 100% of the audio information, before finishing the information presentation with the remaining 50% of the visual information.

Nothing in Breese and Mizokawa can be considered to order preferred modalities by preference, as claimed. Even stretching the definition of preferred

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modalities to user emotions, as the Examiner has done, it is difficult to conceive of an ordering of emotions as claimed.

c. **Defining a focus of the individual's attention**

In marked contrast to Breese and Mizokawa, the claimed invention defines where the individual's attention is focused. The claimed invention defines where the individual's attention is focused by determining a preferred combination of modalities and an ordering of modalities by preference for the individual. For instance, the claimed invention may determine that an individual's preferred mode of operation is to receive information audibly and kinesthetically (preferred combination of modalities) and that the individual has a greater preference toward audible information (ordering by preference), thereby determining the focus of the individual is on what he/she is hearing primarily and on what he/she is feeling secondarily.

The claimed invention identifies/observes where the focus of the person's attention is by analyzing the preferred modalities of the individual. This "thereby clause" operates to give meaning to the limitations in claim 6. Neither Breese, nor Mizokawa can be said to identify/observe where the focus of the person's attention is by analyzing the preferred modalities of the individual. Neither Breese, nor Mizokawa teach or disclose all of the elements of claim 6.

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F. Claim 9

1. US Patent No. 5,987,415 to Breese in View of U.S. Patent No. 6,230,111 to Mizokawa Fail to Teach, Disclose, or Suggest Each Element of the Claim

On page 8 of the final Office Action, claim 9 is rejected under 35 U.S.C. §103 as allegedly being obvious over Breese in view of Mizokawa. The limitation of Claim Group V is directed toward an equation for calculating the combination and order of modalities.

2. The Examiner's Rejection

It is stated in the final Office Action, on page 8, that "***both Breese, Mizokawa do not teach 'modalities calculation by an equation'***", although Breese teaches modeling a user's emotion and personality specifically using Bayesian network inference algorithm [see abstract, col 12, line 29-35], while Mizokawa teaches control system for controlling object using pseudo-emotions and personally specifically calculating using rules or functional equations for pseudo emotions levels and personalities [col 10, line 15-18]. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to not only sense emotions, but also establish relationship between emotions, environmental information to evaluate the behavioral output as suggested by Mizokawa [col 9, line 16-21]," with respect to claim 9.

***(emphasis added)***

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### **3. Discussion of the Cited References**

Breese teaches an invention embodied in a computer user interface. The interface includes an observer capable of observing user behavior, an agent capable of conveying emotion and personality by exhibiting corresponding behavior to a user, and a network linking user behavior observed by said observer and emotion and personality conveyed by said agent. A policy module can dictate to the agent network desired emotion and personality states to be conveyed by the agent based upon user emotion and personality states inferred by the observing network. Basically, Breese is designed to read emotional and personality characteristics of a user and broadcast emotion and personality to the user through an agent based on what the network deems will elicit a desired response from the user. As the final office action admits, Breese does not teach, "determining the preferred modalities of the individual."

Mizokawa is directed towards a semi-autonomous device. The device senses information related to a communication from a user. That information is reviewed for emotional content and, while providing output related to a separate task, tailors the delivery of that output to be responsive to the emotional content sensed.

### **4. Patentable Distinctions Between the Present Claims and the Cited References**

#### **a. The combination and order of modalities is calculated**

The Examiner admits specifically that neither reference uses an equation

to calculate modalities. Here, again, the Examiner misstates the limitation. Claim 9 is drawn to calculating a combination and order of preferred modalities. The Examiner explicitly states that Breese fails to teach determining preferred modalities, so how Breese could be interpreted to contribute to calculating modalities, a combination thereof, and/or an order thereof is not explainable.

It is unclear how the Examiner believes Mizokawa teaches the claim limitation. The claim states the combination and order of modalities is calculated by a given equation. The Examiner states on page 8 of the final Office Action, "it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to ... establish relationship between emotions, environmental information to evaluate behavioral output." The Applicant has no idea how the latter, if true, could be said to teach or disclose the former. Further, it may have been obvious to want to establish that relationship, but it is unclear how the relationship would have been obvious. The Examiner appears to have failed to allege a case of prima facie obviousness.

The Examiner's statement on page 14 is an effort to shed light on the rejection, but it is still confusing. According to the Examiner, Breese teaches Bayesian inference algorithms based on user's emotions and Mizokawa suggests determining pseudo-emotions and, while neither reference teaches "modalities calculation by an equation", combining these references teaches the limitations of claim 9. Neither the word "combination" nor the word "order" appear in either of the Examiner's explanations for rejecting claim 9, yet

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“environmental information” and “pseudo-personality” appear repeatedly, although it is unclear how that relates to claim 9.

b. An equation:  $\sum_{-\infty}^{\infty} ((\sum G_i (\delta x_i / \delta t)) / (\sum G_i (dx_i / dt))) dG_i dt_i \propto \Psi(G)$

Claim 9 is limited to a specific equation for calculating a combination and order of modalities. Neither Breese, nor Mizokawa teaches this equation. As the Examiner stated, neither reference show “modalities calculation by an equation.” It is unclear why this specific equation is obvious in any way.

#### **G. EXAMINER INTERVIEW**

An Examiner Interview was held telephonically on March 23, 2005, at 2PM. Examiner Channavajjala, Attorney Todd Sullivan, Patent Agent Amit Singh, and the inventor, Joseph Carrabis participated in the interview. The Applicant scheduled the interview, in part, in an attempt to explain to the Examiner the difference between neuromotor elements of activity and psychomotor elements of activity as well as attempting to better understand the Examiner’s interpretation of the claims in an effort to advance the prosecution of the present case. During the interview, the Examiner was unwilling to discuss the Rise and Lieberman references, he resisted and, ultimately, avoided viewing an online demonstration of the invention intended to allow him to better appreciate the invention, and he was unable to view with the Applicant an

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Interview Agenda that had been entered into the PAIRS system more than one week prior to the interview.

More to the point, the Examiner used the Examiner Interview as an opportunity to voice other reasons he was unable to allow the claims, which reasons have not appeared in any written office actions. As a result, while the following arguments have not been presented in a written office action, they have been encountered in the Examiner Interview and are addressed herein.

On multiple occasions during the interview, Examiner Channavajjala expressed an unwillingness to allow the claims as written because he was of the opinion the claims were too broad. Breadth of the claims, without more, is not grounds for rejecting or refusing to allow claims. As laid out in Section 2173.04 of the MPEP, undue breadth of the claim may be addressed in several ways, including: arguing that it is too broad because it is unsupported by the enabling disclosure under 35 U.S.C. 112; arguing that the claims are so broad they fail to set out that which the inventor claims as the invention under 35 U.S.C. 112; and arguing the claims are too broad because they read on the prior art under 35 U.S.C. 102 and 103. The simple fact that the Examiner feels the claims are too broad is not sufficient reason to withhold allowance of the claims.

The Examiner mentioned during the interview that one of the reasons the USPTO cannot allow claims that are too broad is that overly broad patent claims may have the unintended consequence of stifling innovation and turning public opinion against the USPTO. While this opinion is a common concern in the

world of patents, particularly with regards to national and international concerns regarding software patents, public policy concerns are generally not grounds for withholding allowance of patent claims. The only public policy basis, as identified in the MPEP, that may be used as grounds for a rejection is under 35 U.S.C. 101 for lack of utility. USPTO examiners have more than enough work to do without attempting to determine how claims, once allowed, may affect industry.

The Examiner further suggested that if claims 6, 7, and 9 were combined into claim 1, he may allow that claim. This suggestion is indicative of the desire to get more limitations into the independent claim for the sake of making the claim less broad. The fact that both claim 7 and claim 9 include the limitations of claims 1 and 6 and that claim 7 is rejected based on the same references used to reject claim 9 make this suggestion confounding. Examiner Channavajjala was unable to explain why he believed the combination of these limitations may overcome the teachings of the prior art. Claim allowance should not be based on word count.

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## CLAIMS APPENDIX

1. A method of obtaining information regarding an environment for an individual, having preferred modalities and engaged in activity, using a programmable device, said method comprising the steps of:

sensing at least one psychomotor behavioral element of the activity engaged by the individual; and

determining the preferred modalities of the individual based on the psychomotor behavioral element of the activity engaged by the individual.

2. The method of Claim 1 further comprising modifying at least one modifiable environmental unit to at least partially conform to the preferred modalities.

3. The method of Claim 2 wherein the environment unit is modified in real-time.

4. The method of Claim 1 further comprising storing the sensed psychomotor behavioral element in a user history.

5. The method of Claim 4 wherein the sensed psychomotor behavioral element is stored in terms of preferred representational geometries via linear algebraic transforms.

6. The method of Claim 1 wherein the step of determining preferred modalities includes determining a preferred combination of modalities and an ordering of

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modalities by preference thereby further defining a focus of the individual's attention.

7. The method of Claim 6 further comprising the step of modifying the environmental unit to provide content in the environment in the preferred combination of modalities and the order of modalities by preference whereby the combination and the order are placed in at least one respective co-ordinate group of representational geometry to which attention of the individual is drawn, as indicated by the psychomotor behavioral element.

8. The method of Claim 6 further comprising:

defining a psychodynamic and a cognitive behavioral model using the preferred combination of modalities and the order of modalities; and

modifying at least one environmental unit as a function of the psychodynamic behavioral model and the cognitive behavioral model.

9. The method of Claim 6 wherein the combination and order of modalities is calculated by an equation:  $\sum_{-\infty}^{\infty} ((\sum G_i(\delta x_i/\delta t))/(\sum G_i(dx_i/dt_i)))dG_idt_i \propto \Psi(G)$

10. The method of Claim 1 wherein the environment is multi-dimensional and has a plurality of modifiable environmental units.

11. The method of Claim 1 further comprising

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preprogramming the device to monitor the individual for at least one specific types of psychomotor behavioral elements; and  
communicating an occurrence of the specific type of psychomotor behavioral element.

12. A programmable apparatus for obtaining information regarding an environment to an individual having preferred modalities, said apparatus comprising:

at least one sensor for sensing psychomotor behavioral activity of the individual; and

a processing unit connected to the sensor for receiving the sensed psychomotor behavioral activity and calculating the individual's preferred modalities based on the sensed psychomotor behavioral activity.

13. The apparatus of Claim 12 further comprising at least one modifiable environmental unit, modified by at least one instruction from the processing unit to at least partially conform the environment to the calculated preferred modality of the individual.

14. The apparatus of Claim 12 further comprising a memory device to store sensed psychomotor behavioral activity of the individual.

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15. The apparatus of Claim 14 wherein the processing unit uses stored sensed psychomotor behavioral activity of the individual to refine the preferred modality calculation.

16. The apparatus of Claim 13 wherein the preferred modalities are calculated while sensing psychomotor behavioral activity and concurrently used for modifications to the environmental units.

17. The apparatus of Claim 13 wherein the sensor includes at least one input device for a computer and the modifiable environmental unit includes at least one output device.

18. The apparatus of Claim 12 further comprising an indicator connected to the processing unit, wherein the processing unit is preprogrammed to monitor for specific psychomotor behavioral activity and the indicator indicates at least one of the group consisting of:

a match between the sensed psychomotor behavioral activity and the specific psychomotor behavioral activity; and

a nonmatch between the sensed psychomotor behavioral activity and the specific psychomotor behavioral activity.

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## **EVIDENCE APPENDIX**

None submitted by the Applicant and none entered by the Examiner.

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**RELATED PROCEEDINGS APPENDIX**

No related proceedings exist or existed.

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### **CONCLUSION**

In view of the foregoing, it is respectfully requested that the Examiner's rejection of the subject application be reversed.

Respectfully submitted,



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### **CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief – Patents, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on October 27, 2006 at Manchester, New Hampshire.

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